

5/46

DART AEROSPACE LTD	Work Order:	24685
Description: Doubler Assembly	Part Number:	D3151-041
Dwg: D3151 Rev: B	Qty:	5/10

Page 1 of 1

Step	Location	Procedure	By	Date	Qty
1	DC	Issue Traveler <b>Note: To be made in multiples of 10</b>	KJ	05.10.26	5/10
2	MV	Cut blank: 2.850" x 4.600" Material: 2024-T3 (QQ-A-250/4) 0.040" thick (M2024T3S.040) <b>Identify for D3151-1</b>	SD	05.11.25	10
3	MV	Cut blank: 6.850" x 2.850" Material: 2024-T3 (QQ-A-250/4) 0.040" thick (M2024T3S.040) <b>Identify for D3151-3</b>	SD	05.11.25	10
4	MV	Machine D3151-1 as per Folio FA476 and Dwg D3151 <b>Stack of 10</b> <b>Identify as D3151-1</b>	SD	05.12.03	10
5	QC2	Inspect parts as they come off the CNC machine	SD	05.12.03	10
6	QC8	Second check	SD	05.12.03	10
7	MV	Machine D3151-3 as per Folio FA476 and Dwg D3151 <b>Stack of 10</b> <b>Identify as D3151-3</b>	SD	05.12.03	10
8	QC2	Inspect parts as they come off the CNC machine	SD	05.12.03	10
9	QC8	Second check	SD	05.12.03	10
10	GA	Deburr D3151-1/3	SD	05.12.04	10
11	GA	C'sink holes as per Dwg D3151	FE	05.12.06	10
12	QC5	Inspect work to Step 11	SD	05.12.07	10
13	FP	Chemical Conversion Coat as per QSI 005 4.1	SD	05.12.07	10
14	QC3	Inspect Chemical Conversion Coat	SD	05.12.07	10
15	GA	Assemble as per Dwg D3151 <b>Pick:</b> Qty Part Number Description Batch 6 MS20426AD3-3 Rivet 177681 4 MS20426AD3-4 Rivet 15706 2 MS21059L08 Nut Plate 171005 <b>Identify as D3151-041</b>	FF FF FF	05.12.08	10
16	QC5	Inspect work to Step 15	SD	05.12.08	10
17	ST	Identify with part number and batch number using fine point permanent ink marker as per Dwg D3151, then Stock 407Lc	SD	05.12.08	10
18	AC	Cost / part:	SD	05.12.12	10
19	DC	Close W/O Inspect Level 21	SD	05.12.12	10

Rev	Date	Change	Revised By	Approved
A	04.12.01	New issue	KJ/JLM	

RELEASED  
10/12/03

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
05-12-06	11	Make change As per Dwg permanent change <i>Z</i>				<i>PK 05-12-06 PR12 Q51 P42</i>	<i>Z 05-12-06</i>

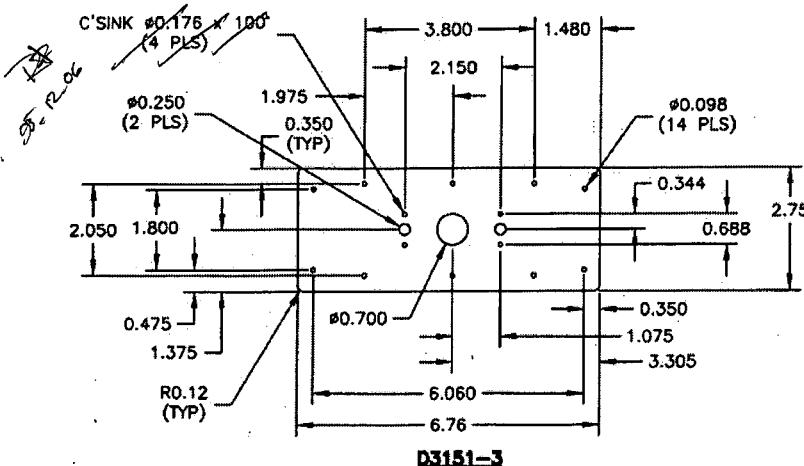
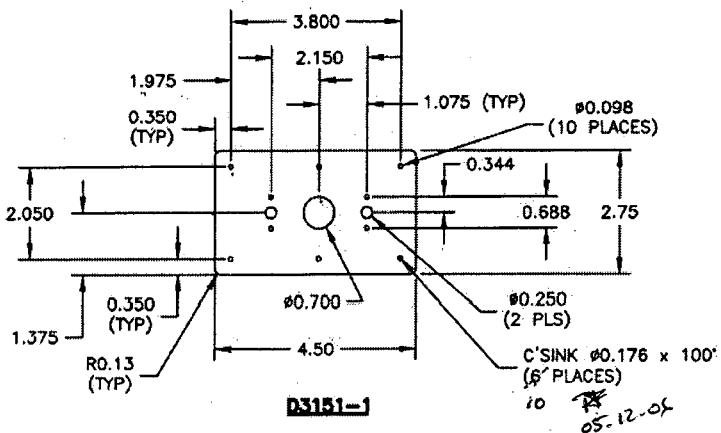
Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes  No  DQA: *SP* Date: *05/12/12*  
 QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
								<i>W</i>

NOTE: Date & initial all entries

**DART**

DESIGN <i>RF</i>	DRAWN BY <i>RF</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>[initials]</i>	APPROVED <i>[initials]</i>	DRAWING NO. D3151	REV. B SHEET 1 OF 1
DATE 04.09.08		TITLE DOUBLER ASSEMBLY	SCALE 1:4
A	02.04.23	NEW ISSUE	
B	04.09.08	RE-DESIGN	

MS20426AD3-3 RIVET (1)  
(6 PLACES)MS21059L08 NUTPLATE (1)  
MS20426AD3-4 RIVET (2)  
(2 PLACES)**D3151-041 DOUBLER ASSEMBLY**  
REPLACES PREMIER P/N B30-23000-173/-174**RELEASED**  
04.11.23

SHOP COPY

RETURN TO  
ENGINEERING

UNCONTROLLED COPY

ATTN: EIC

WORK ORDER

NO. 24685

## NOTES

- 1) MATERIAL: 2024-T3 SHEET (QQ-A-250/4) 0.040" THICK (REF. DART SPEC. M2024T3S.040)
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) ALL DIMENSIONS ARE IN INCHES
- 5) BREAK ALL UNMARKED SHARP EDGES 0.005 TO 0.010
- 6) IDENTIFY WITH DART P/N D3151-041 USING FINE POINT PERMANENT INK MARKER

Job Costing Report

Dart, Aerospace Ltd.  
Hawkesbury

Oct 25, 2005  
04:04 pm

Work Order No : 0024685  
 Project Name : D3151-041  
 Project For : WK546  
 Work Order Type : Main  
 Main WO Number :  
 House Part Number : D3151-041  
 Description : Doubler Assembly  
 Manufactured : Yes  
 Amount Req'd : 5  
 Amount Done : 0  
 Start Date : 10-25-05  
 Est Finish Date : 11-15-05  
 Act Finish Date :  
 Drawings Reqd : No  
 Ok for Approval :  
 Approval Rec'd :  
 Department Code:  
 Burden Flags : NNNNNNN  
 WO Status : Open  
 Invoice State : Not Invoiced  
 Invoice Date :  
 Invoice Number :  
 Invoice Amount : 0.00  
 Order Entry No :  
 OE Value : 0.00  
 Est Mark Up : 0.000%  
 Actual Mark Up : 0.000%  
 \$0 Posted to Finished Goods

	Estimated	Actual	Var. %	Posted	To Post
Material Cost	0.00	0.00	0.00	0.00	0.00
Engineering Hours	0.00	0.00	0.00		
Engineering Cost	0.00	0.00	0.00	0.00	0.00
Production Hours	0.00	0.00	0.00		
Production Cost	0.00	0.00	0.00	0.00	0.00
Packaging Hours	0.00	0.00	0.00		
Packaging Cost	0.00	0.00	0.00	0.00	0.00
OverHead Hours	0.00	0.00	0.00		
OverHead Cost	0.00	0.00	0.00	0.00	0.00
CNC Hours	0.00	0.00	0.00		
CNC	0.00	0.00	0.00	0.00	0.00
Misc. Hours	0.00	0.00	0.00		
Misc.	0.00	0.00	0.00	0.00	0.00
<hr/>					
Burden	0.00	0.00	0.00		
<hr/>					
Total Cost	0.00	0.00	0.00		
Mark up	0.000	0.000			
Selling Cost	0.00	0.00			

	Estimated	Actual
Labour Hrs/Amount Done	0.00	0.00
Profits/(Loss)	0.00	0.00

DART AEROSPACE LTD	Work Order:	24685
Description:	Part Number:	3151-1
Inspection Dwg:	Rev:	Page 1 of 1

## FIRST ARTICLE INSPECTION CHECKLIST

First Article  Prototype

Measured by:	SA	Audited by:	EP	Prototype Approval:	
Date:	05.12.03	Date:	05/12/03	Date:	

Rev	Date	Change	Revised by	Approved
A		New Issue	KJ/RF	

DART AEROSPACE LTD	Work Order:	24685
Description:	Part Number:	3151-3
Inspection Dwg:	Rev:	Page 1 of 1

## FIRST ARTICLE INSPECTION CHECKLIST

First Article  Prototype

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
6.76	$\pm .030$	6.762	/			
2.75	$\pm .030$	2.751	/			
.700		.700	/			
.250		.252	/			
.098		.099	/			
6.060	$\pm .010$	6.062	/			
1.375	--	1.375	/			
.475	--	.476	/			
2.050	--	2.051	/			
1.800	--	1.800	/			
.350	--	.351	/			
1.975	--	1.976	/			
3.800	--	3.801	/			
2.150	--	2.151	/			
1.480	--	1.481	/			
.344	--	.345	/			
.688	--	.688	/			
.350	--	.351	/			
1.075	--	1.077	/			
3.305	--	3.306	/			

Measured by:	SA	Audited by:	RG	Prototype Approval:	
Date:	05.12.03	Date:	05.12.03	Date:	

Rev	Date	Change	Revised by	Approved
A		New Issue	KJ/RF	

Date: Monday, 11/21/2005 3:41:42 PM  
 User: Linda Lacelle

## Process Sheet

Customer	: CU-DAR001 Dart Helicopters Services		Drawing Name	: DOUBLER ASSEMBLY		
Job Number	: 24685					
Estimate Number	: 10786					
P.O. Number	:			Part Number	: D3151041	
This Issue	: 11/21/2005		S.O. No. :	Drawing Number	: D3151 REV B	
Prsht Rev.	: NC			Project Number	:	
First Issue	: / /		Type :	Drawing Revision	: B	
Previous Run	:			Material	:	
Written By	:			Due Date	: 11/28/2005	
Checked & Approved By	:			Qty:	5 Um: Each	
Comment	: Est A 04.12.01 New issue KJ/JLM					

## Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :									
1.0	24685A	DOUBLER ASSEMBLY									
 Comment: Sub-Component DOUBLER ASSEMBLY											
2.0	24685B	DOUBLER ASSEMBLY									
 Comment: Sub-Component DOUBLER ASSEMBLY											
3.0	D31511	Bracket Flat Pattern									
 Comment: Qty.: 1.0000 Each(s)/Unit Total : 5.0000 Each(s) BRACKET FLAT PATTERN Pick: <table> <thead> <tr> <th>Qty</th> <th>Part Number</th> <th>Description</th> <th>Batch</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>D3151-1</td> <td>Spacer</td> <td></td> </tr> </tbody> </table>				Qty	Part Number	Description	Batch	1	D3151-1	Spacer	
Qty	Part Number	Description	Batch								
1	D3151-1	Spacer									
4.0	D31513	BRACKET									
 Comment: Qty.: 1.0000 Each(s)/Unit Total : 5.0000 Each(s) BRACKET Pick: <table> <thead> <tr> <th>Qty</th> <th>Part Number</th> <th>Description</th> <th>Batch</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>D3151-3</td> <td>Bracket</td> <td></td> </tr> </tbody> </table>				Qty	Part Number	Description	Batch	1	D3151-3	Bracket	
Qty	Part Number	Description	Batch								
1	D3151-3	Bracket									
5.0	MS20426AD33	Rivet									
 Comment: Qty.: 6.0000 Each(s)/Unit Total : 30.0000 Each(s) Rivet Pick: <table> <thead> <tr> <th>Qty</th> <th>Part Number</th> <th>Description</th> <th>Batch</th> </tr> </thead> <tbody> <tr> <td>6</td> <td>MS20426AD3-3</td> <td>Rivet</td> <td></td> </tr> </tbody> </table>				Qty	Part Number	Description	Batch	6	MS20426AD3-3	Rivet	
Qty	Part Number	Description	Batch								
6	MS20426AD3-3	Rivet									

Date: Monday, 11/21/2005 3:41:42 PM  
User: Linda Lacelle

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: DOUBLER ASSEMBLY

Job Number: 24685

Part Number: D3151041

Job Number:



Seq. #:

Machine Or Operation:

Description :

6.0 MS20426AD34

RIVET



Comment: Qty.: 4.0000 Each(s)/Unit Total : 20.0000 Each(s)

RIVET

Pick:

Qty	Part Number	Description	Batch
4	MS20426AD3-4	Rivet	_____

7.0 MS21059L08

Nut



Comment: Qty.: 2.0000 Each(s)/Unit Total : 10.0000 Each(s)

Nut

Pick:

Qty	Part Number	Description	Batch
2	MS21059L08Nut	Plate	_____

8.0 SMALL FAB 1

SMALL & MEDIUM FAB RESOURCE 1



Comment: SMALL & MEDIUM FAB RESOURCE 1

Assemble as per Dwg D3065 and Identify as D3065-041

9.0 QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

10.0 PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify with P/N and B/N as per Dwg using a permanent fine point marker, then Stock

Location: \_\_\_\_\_

11.0 DC

DOCUMENT CONTROL



Comment: DOCUMENT CONTROL

Inspection Level 21

Job Completion



Job Costing Report

Dart Aerospace Ltd.  
Hawkesbury

Nov 08, 2005  
12:44 pm

Work Order No	:	0024685	Department Code:		
Project Name	:	D3151-041	Burden Flags	:	NNNNNNN
Project For	:	WK546	WO Status	:	Open
Work Order Type	:	Main	Invoice State	:	Not Invoiced
Main WO Number	:		Invoice Date	:	
House Part Number	:	D3151-041	Invoice Number	:	
Description	:	Doubler Assembly	Invoice Amount	:	0.00
Manufactured	:	Yes			
Amount Req'd	:	5			
Amount Done	:	0	Order Entry No	:	
Start Date	:	10-25-05	OE Value	:	0.00
Est Finish Date	:	11-15-05			
Act Finish Date	:		Est Margin	:	0.000%
Drawings Reqd	:	No	Actual Margin	:	0.000%
Ok for Approval	:				
Approval Rec'd	:				\$0 Posted to Finished Goods

	Estimated	Actual	Var. %	Posted	To Post
Material Cost	:	0.00	0.00	0.00	0.00
Engineering Hours	:	0.00	0.00	0.00	0.00
Engineering Cost	:	0.00	0.00	0.00	0.00
Production Hours	:	0.00	0.00	0.00	0.00
Production Cost	:	0.00	0.00	0.00	0.00
Packaging Hours	:	0.00	0.00	0.00	0.00
Packaging Cost	:	0.00	0.00	0.00	0.00
OverHead Hours	:	0.00	0.00	0.00	0.00
OverHead Cost	:	0.00	0.00	0.00	0.00
CNC Hours	:	0.00	0.00	0.00	0.00
CNC	:	0.00	0.00	0.00	0.00
Misc. Hours	:	0.00	0.00	0.00	0.00
Misc.	:	0.00	0.00	0.00	0.00
<hr/>					
Burden	:	0.00	0.00	0.00	
<hr/>					
Total Cost	:	0.00	0.00	0.00	
Margin	:	0.000	0.000		
Selling Cost	:	0.00	0.00		

	Estimated	Actual	
Labour Hrs/Amount Done	:	0.00	0.00
Profits/ (Loss)	:	0.00	0.00